

Water Utility: PDAM Tirtanadi (Tirtanadi)

Medan Provinces, North Sumatera , Indonesia

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Services Provided: Piped water, Wastewater, , ,

Utility Type: , Government with separate reporting for WS&S, , , , ,

Private Sector Involvement: , , , , , BOOT, BOT Contract,

Source of Raw Water: , , Direct river abstraction, Groundwater,

Treatment Method: , Disinfection, Filtration, Flocculation and sedimentation, , ,

Water Supply System description:

Production capacity = 388,800 m3/day		Distribution network = 6,386 km		Storage capacity = N/A
Area (sq km)		Area of Responsibility		Present Service Area
Population		4,201,736		14,834
No. of Towns = 9		Population served = 2,148,838		
<u>No. of connections:</u>		Domestic (Households) = 293,504		Non Domestic = 29,253
Typical service connection length = 12 m		Total Connections = 322,757		Connections with operating meter = 322,757
System input volumes:	Produced by W.U. = 142.9 million m3/year	Bulk water imported = zero		
Water consumption:	Metered cons. = 140.7 million m3/year	% Unmetered cons. = 20% of metered cons.		Ave. meter inaccuracy = N/A
Water Sales:	Domestic = 99.7 million m3/year	Non Domestic = 13.1 million m3/year		Bulk Water sales = zero
<u>System Performance:</u>	No. of connections with intermittent supply = N/A		Typical duration of supply = 24.0 hours / day	
	No. of pipe breaks in distribution system = N/A		Typical water pressure in mains = 15 m.	
Chlorine Residuals:	Tests required = 9,530 / year	Tests carried out = 30,000 / year		Tests passed = 29,000 / year

Human Resources (Staff)

<u>Type of employment:</u>	, Permanent staff, with contract, , , ,			
<u>No. of staff (FTE):</u>	Corporate Services = zero	Water Supply = zero	Other = zero	Total = 1,184
<u>Staff Training:</u>	No. Trained = 1,184 / year	Training days = 1,312 / year	Training costs = 0.57% of total operating budget	

Customer information

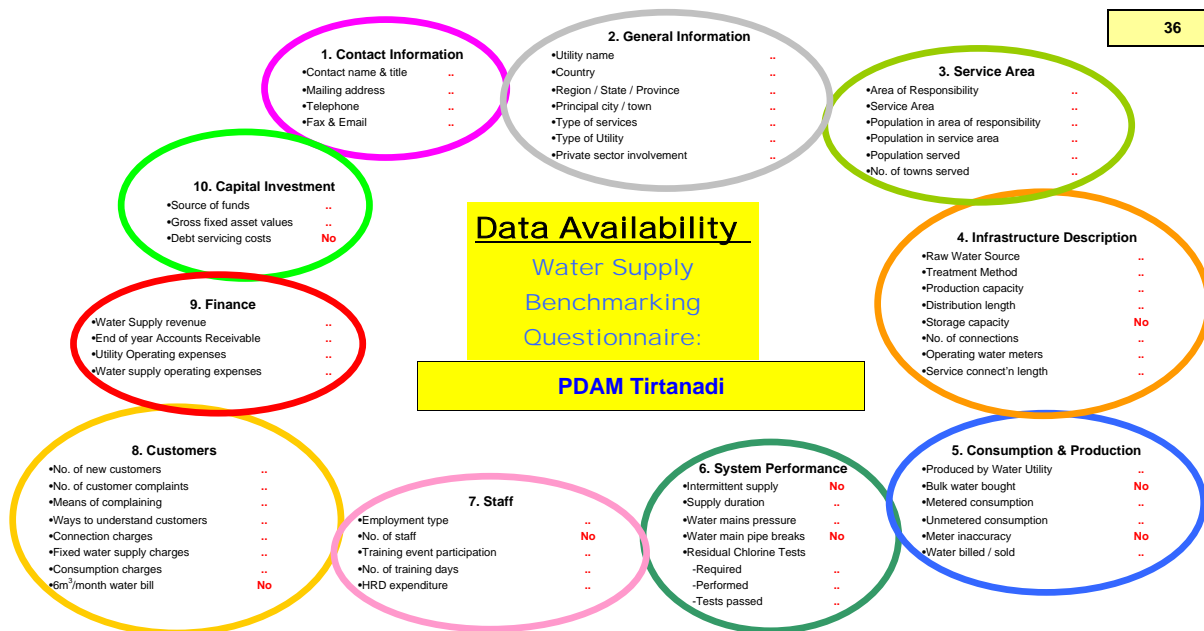
Customer interaction:	New connections = 13,702 / year	Customer complaints = 526 / year
Complaint method:	In person, By telephone, By email, By letter,	
Understanding customers by:	Customer interactions, Responding to complaints, Surveys, questionnaires, etc., ,	

Charges & Fees

<u>Typical connection charge:</u>	Domestic = 1,000,000IDR / conn. (109 US\$ / conn.)		Non Domestic = 1,000,000IDR / conn. (109 US\$ / conn.)	
<u>Fixed water charge:</u>	ic = 1,516IDR / month (0 US\$ / conn.)		Non Domestic = N/A Bulk water sales = N/A	
<u>Water consumption tariff</u> (typical of all towns and in each category):	Tariff Block 1	Tariff Block 2	Tariff Block 3	Tariff Block 4
Domestic	From - To (m ³)	0 - 10	10 - 20	20 - 50
	Price (IDR / m ³)	678	1,103	1,658
	(US\$ / m ³)	\$0.07	\$0.12	\$0.18
Non Domestic	From - To (m ³)	0 - 10	10 - 20	20 - 50
	Price (IDR / m ³)	2,440	2,480	3,040
	(US\$ / m ³)	\$0.27	\$0.27	\$0.33
Bulk Water	From - To (m ³)			
	Price (IDR / m ³)			
	(US\$ / m ³)			
Water bill for household consuming 6 m ³ /month =				N/A

Finances

<u>Revenue:</u>	Water Sales	Other water related	Subsidies & grants	Total	Year end Accounts Receivable
	IDR / year	188,198,639,160	1,021,195,301	zero	189,219,834,461
	US\$ / year	\$20,545,927	\$111,485	zero	\$20,657,413
<u>Operating Expenses:</u>	Water supply	Other services	Company Overhead	Total	
	IDR / year	85,661,041,743	4,502,773,783	zero	90,163,815,526
	US\$ / year	\$9,351,744	\$491,575	zero	\$9,843,319
<u>Water Supply Operating breakup:</u>	Labor	Electricity	Chemicals & materials	Contracted out	Other expenses
	IDR / year	50,090,608,070	32,525,283,461	7,264,501,063	zero
	US\$ / year	\$5,468,467	\$3,550,834	\$793,076	zero
<u>Investment funds source:</u> Own internal funds, , , , ,					
<u>Fixed Assets value:</u>	Water supply	Other services	Company Overhead	Total	Debt Servicing Costs
	IDR	342,326,125,208	zero	35,802,743,065	378,128,868,273
	US\$	\$37,372,256	zero	\$3,908,639	\$41,280,895



Calculation of Overall Performance Indicator (OPI)

Customer Indicators	Value	Rank
Service Coverage in existing service area (%)	51.1%	(34 / 45)
Meter coverage (% with operating water meter)	100.0%	(1 / 46)
Customer complaints / 1000 connections	1.6	(36 / 41)

Water Supply Systems O&M	Value	Rank
Supply Continuity (% of time water available)	100.0%	(1 / 47)
Residual Chlorine tests passed (%)	96.7%	(18 / 34)
Total Unmetered Consumption (% of metered cons.)		
Infrastructure Leakage Index [ILI]	-10	(26 / 26)

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Overall Performance Indicator (OPI) = - 0.35
 Number of Standardized Indicators available = 8
 Overall Ranking = (38 / 47)

Human Resource Indicators	Value	Rank
Total water related staff / 1000 connections	#N/A	
Investment in staff training (days / staff)	1.1	(14 / 33)
Ave. cost of employment / staff (% of per capita GNI)	#N/A	

Financial Indicators	Value	Rank
Operating Cost Coverage (water sales only)	#N/A	
Unit water cost (US\$ / m ³ of system input)	#N/A	
Water system asset value / Prod'n capacity (US\$ / m ³ /day)	\$96	(16 / 35)
Debt servicing ratio (% of total operating revenue)		

Financial Indicators: Annual expenses & revenue

Operating Cost Coverage		Expenses	
Operating Cost Coverage (water sales only)	#N/A	Overhead expenses / Total Operating expenses ratio	#N/A
Operating Cost Coverage (total revenue)	#N/A	Labour costs / Water operating expenses	0.59
		Electricity costs / Water operating expenses	0.38
		Chemical & other materials costs / Water operating expenses	0.09
		Contracted out services costs / Water operating expenses	#N/A
Revenue		Unit water cost	(US\$ / m ³ of metered cons.) #N/A
Water sales revenue / Total revenue ratio	1.00		(US\$ / m ³ of system input) #N/A
Subsidies & Grants / Total revenue ratio	#N/A	Debt servicing ratio (% of total operating revenue)	#N/A
Revenue Collection period (months)	0.80		
Unit water price - ave. (US\$ / m ³ of metered cons.)	0.18		

Fixed Assets

Corporate Fixed Assets / Total Fixed Assets	0.10
Water system asset values	
Asset value / Total water related assets	#N/A
Asset value / Prod'n capacity (US\$ / m ³ /day)	96
Asset value / pipe length (US\$ / m. pipe)	6
Asset value / Customer (US\$ / conn.)	116

System Input

Production capacity utilization (%)	101%
Bulk water imported (% of total system input)	0%
System Input Rate (litres/person/day)	182
(m ³ /connection/month)	37.0
System Input / Distribution ratio (m ³ /day per km pipe)	61.0
System Input / Storage ratio (m ³ /day per m ³ storage)	#N/A
Supply Continuity (% customers with continuous supply)	#N/A
Supply Continuity (% of time water available)	100%

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OPI Ranking = 38 / 47

Human Resource Indicators

Human Resource Utilisation		Human Resource Development	
Overhead staff ratio (% of total FTE staff)	#N/A	Staff Training participation rate (% staff)	100%
Water supply staff ratio (% of total FTE staff)	#N/A	Staff Training duration rate (days / staff)	1.1
Total water related staff / 1000 connections	#N/A	Investment in staff training (% of direct labour costs)	0.97%
Direct water supply staff		Investment in staff training (% of total operating costs)	0.57%
Staff / 1000 connections	#N/A	Human Resources Costs	
Staff / 1000 m ³ /day system input	#N/A	Ave. cost of employment / staff (% of per capita GNI)	#N/A
Staff / 100 km of pipework	#N/A	Contracting out services / in-house Labour costs ratio	#N/A

Distribution

Distribution / customer (m. pipe per connection)	19.8
Storage / customer (m ³ per connection)	#N/A
Residual Chlorine	
Sampling compliance (%)	315%
Tests passed (%)	97%
Non Revenue Water (UFW)	
% of System Input	21%
m ³ / km / day	12.9
m ³ / connection / day	0.26
NRW adjusted for continuous supply (% of System Input)	21%
Unbilled Authorized & Unauthorized Cons. (% of metered cons.)	#N/A
Unmetered cons. due to meter inaccuracies (% of metered cons.)	#N/A
Total Unmetered Consumption (% of metered cons.)	#N/A
Infrastructure Leakage Index [ILI]	-10.00
Mains failures ratio (breaks / km pipe / year)	#N/A

Water consumption

Bulk water exported (% of total metered cons.)	0%
Average domestic water charges (% of per capita GNI)	#N/A
Metered consumption rate	
- Domestic (litres/person/day)	127
- Total Cons. (litres/person/day)	144
(m ³ /conn/month)	29
Total consumption - metered & unmetered	
(litres/person/day)	172.00
(m ³ /conn/month)	35.00
Domestic share of total metered consumption (%)	88%
Non Domestic share of total metered consumption (%)	12%

Demography

Average town / city size (persons / town)	466,860
Population density in area of responsibility (persons/sq.km)	283
Population density in existing service area (persons/sq.km)	283
Average Household size (persons / domestic connection)	7

Customer Interactions

Customer complaints / 1000 connections	2
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Connections

Service Coverage in area of responsibility (%)	51%
Service Coverage in existing service area (%)	51%
Domestic / Non-Domestic connections ratio	10.0
Domestic / Non-Domestic consumption rate ratio	7.6
New connection growth rate (% / year)	4%
New domestic connection cost (US\$ / connection)	109
New domestic connections (% of per capita GNI)	2%
Meter coverage (% with operating water meter)	100%
Billed unmetered consumption (% of metered cons.)	-20%

Water Sales & Production Information

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